**IN THE CLAIMS**

1. (Previously Presented) An apparatus comprising:

(a) a vacuum deposition chamber, wherein the deposition chamber is divided into two or more deposition regions that are integrally connected to one another; and

(b) a wafer support disposed in the deposition chamber, wherein the wafer support is vertically moveable between the two or more interconnected deposition regions.

2. (Original) The apparatus of claim 1 wherein a piston coupled to the wafer support moves the wafer support between the two or more interconnected deposition regions.

3. (Previously Presented) The apparatus of claim 1, further comprising a heater wherein the heater is adapted to control the temperature of the wafer support.

4. (Previously Presented) The apparatus of claim 1 wherein the wafer support is an electrostatic chuck.

5. (Original) The apparatus of claim 1 wherein each of the two or more deposition regions are integrally connected to another of the two or more deposition regions with an aperture.

6. (Original) The apparatus of claim 5 wherein the aperture is sealed to minimize the intermixing of deposition gases between the two or more deposition regions.

7. (Original) The apparatus of claim 1, further comprising a gas supply panel coupled to the deposition chamber.

8. (Original) The apparatus of claim 7 wherein the gas supply panel includes one or more gas supply lines which couple the gas supply panel to the deposition chamber.

9. (Original) The apparatus of claim 1, further comprising a gas exhaust pump coupled to the deposition chamber.

10. (Previously Presented) A method of depositing a material layer on a substrate comprising:

(a) positioning a substrate on a wafer support in a deposition chamber comprising a first and second deposition region, wherein the first and second deposition regions are integrally connected to one another, and wherein the wafer support is movable between the first and second deposition regions;

(b) introducing a first deposition gas into the first deposition region and a second deposition gas into the second deposition region;

(c) moving the wafer support with the substrate thereon into the first deposition region wherein a first monolayer of the first deposition gas is chemisorbed onto the surface of the substrate;

(d) changing the elevation of the wafer support to transport the substrate thereon into the second deposition region wherein a first monolayer of the second deposition gas is chemisorbed on the first monolayer of the first deposition gas; and

(e) repeating steps (c) and (d) until a material layer having a desired thickness is achieved.

11. (Previously Presented) A computer storage medium containing a software routine that when executed causes a general purpose computer to control a process chamber using a layer deposition method, comprising:

(a) positioning a substrate on a wafer support in a deposition chamber comprising a first and second deposition region, wherein the first and second deposition regions are integrally connected to one another, and wherein the wafer support is movable between the first and second deposition regions;

(b) introducing a first deposition gas into the first deposition region and a second deposition gas into the second deposition region;

(c) moving the wafer support with the substrate thereon into the first deposition region wherein a first monolayer of the first deposition gas is chemisorbed onto the surface of the substrate;

(d) changing the elevation of the wafer support to transport the substrate thereon into the second deposition region wherein a first monolayer of the second deposition gas is chemisorbed on the first monolayer of the first deposition gas; and

(e) repeating steps (c) and (d) until a material layer having a desired thickness is achieved.

12. (Cancelled)

13. (Previously Presented) The apparatus of claim 1, wherein the first and second deposition regions are vertically stacked.

14. (Previously Presented) The apparatus of claim 1, wherein the chamber further comprises:

a first orifice adapted to provide process gas to the first deposition region; and

a second orifice adapted to provide process gas to the second deposition region.

15. (Previously Presented) The apparatus of claim 14, wherein the first orifice is disposed vertically above the second orifice.

16. (Cancelled)

17. (Currently Amended) A method of depositing a material layer on a substrate comprising:

positioning a substrate on a substrate support in a deposition chamber comprising a first deposition region and a second deposition region, wherein the first and second deposition regions are integrally connected to one another, and wherein the substrate support is moveable between the first and second regions;

depositing a first monolayer on the substrate disposed on the substrate support in the first deposition region;

elevating the wafer positioned on the substrate support to the second deposition region; and

depositing a layer on the substrate in the second deposition region;

18. (Previously Presented) The method of claim 17 further comprising:

depositing a second monolayer on the substrate in the second deposition region.

19. (Previously Presented) The method of claim 17 further comprising:

introducing a first deposition gas to form the first monolayer in the first deposition region; and

introducing a second deposition gas to deposit the layer in the second deposition region.

20. (Previously Presented) An apparatus for processing a substrate comprising:

a deposition chamber wherein the deposition chamber is divided into two or more deposition regions that are integrally connected to one another, at least one of said regions being adapted to support deposition of a monolayer upon a surface of a substrate; and

a wafer support disposed in the deposition chamber and having a horizontal wafer supporting surface, wherein the wafer support is moveable between two or more interconnected deposition regions.

21. (Previously Presented) The apparatus of claim 20 in which at least one of said regions is sealed so as to minimize intermixing of deposition gases within two or more deposition regions.

22. (Previously Presented) The apparatus of claim 20 in which said chamber further comprises an orifice for each of said deposition regions, each orifice adapted to provide process gas to a respective deposition region

23. (Previously Presented) The apparatus of claim 22, in which each orifice is adapted to provide differing process gases.

24. (Previously Presented) The apparatus of claim 22 in which at least one of said orifices is adapted to provide process gas and purge gas.

25. (Previously Presented) The apparatus of claim 20 wherein one of said deposition regions is vertically stacked above another of said deposition regions.

26. (Previously Presented) The apparatus of claim 20 wherein at least two of the deposition regions are positioned side by side.

27. (Previously Presented) The apparatus of claim 20 in which said at least one deposition region is adapted to support deposition of a second monolayer

28. (Previously Presented) The apparatus of claim 20 in which said at least one deposition region is adapted to support deposition via chemisorption.

29. (Previously Presented) An apparatus for processing a substrate, comprising:

a deposition chamber wherein the deposition chamber is divided into two or more deposition regions that are integrally interconnected to one another, at least one of said deposition regions being adapted to support deposition of a first monolayer upon a surface of a substrate and at least one of said deposition regions being optionally sealable from the other deposition regions; and

a wafer support disposed in the deposition chamber and configured to support the substrate horizontally, wherein the wafer support is moveable between two or more interconnected deposition regions.

30. (Previously Presented) The apparatus of claim 29 in which said at least one regions are adapted to support deposition of a second monolayer.

31. (Previously Presented) The apparatus of claim 29 in which at least one of said regions is sealed so as to minimize intermixing of deposition gases within two or more deposition regions.

32. (Previously Presented) The apparatus of claim 29 in which said chamber further comprises an orifice for each of said deposition regions, each orifice adapted to provide process gas to a respective deposition region

33. (Previously Presented) The apparatus of claim 22, in which each orifice is adapted to provide differing process gases.

34. (Previously Presented) The apparatus of claim 22 in which at least one of said orifices is adapted to provide process gas and purge gas.

35. (Previously Presented) The apparatus of claim 29 wherein one of said deposition regions is vertically stacked above another of said deposition regions.

36. (Previously Presented) The apparatus of claim 29 wherein at least two of the deposition regions are positioned side by side.

37. (Cancelled)

38. (Previously Presented) The apparatus of claim 29 in which said at least one deposition region is adapted to support deposition via chemisorption.

39. (Previously Presented) The method of claim 19 further comprising:

flowing a purge gas into at least one of the integrally connected deposition regions between the introduction of the first and second deposition gases.

40. (Previously Presented) The method of claim 19, wherein the step of moving the wafer positioned on the substrate support to the second deposition region further comprises:

moving the substrate support vertically.

41. (Previously Presented) The method of claim 19, wherein the step of moving the wafer positioned on the substrate support to the second deposition region further comprises:

moving the substrate support horizontally.

42. (Previously Presented) An apparatus for processing a substrate, comprising:

a deposition chamber body having a sealable port configured for horizontal entry and egress of a substrate;

at least two or more deposition regions defined in the chamber body, at least a first deposition region of said deposition regions is adapted to support vertical deposition of a first monolayer upon a surface of a substrate; and

a wafer support disposed in the deposition chamber, wherein the wafer support is moveable between two or more interconnected deposition regions.

43. (Previously Presented) The apparatus of claim 42, wherein at least one of said deposition regions is sealable from the other deposition regions

44. (Previously Presented) The apparatus of claim 42, wherein said at least a second deposition region is adapted to support deposition of a second monolayer.

45. (Previously Presented) The apparatus of claim 42 in which at least one of said regions is sealed so as to minimize intermixing of deposition gases within two or more deposition regions.

46. (Previously Presented) The apparatus of claim 42 in which said chamber further comprises an orifice for each of said deposition regions, each orifice adapted to provide process gas to a respective deposition region

47. (Previously Presented) The apparatus of claim 46, in which each orifice is adapted to provide differing process gases.

48. (Cancelled)

49. (Previously Presented) The apparatus of claim 42 wherein one of said deposition regions is vertically stacked above another of said deposition regions.

50. (Previously Presented) The apparatus of claim 42 wherein at least two of the deposition regions are positioned side by side.

51. (Previously Presented) The method of claim 17, wherein the deposition chamber is a vacuum deposition chamber.

52. (Previously Presented) The apparatus of claim 20, wherein the deposition chamber is a vacuum deposition chamber.

53. (Previously Presented) The apparatus of claim 29, wherein the deposition chamber is a vacuum deposition chamber.

54. (Previously Presented) The apparatus of claim 42, wherein the deposition chamber is a vacuum deposition chamber.